

SOME ALGAL INVADERS OF
THE NORTHWESTERN FRINGES
OF THE SARGASSO SEA

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The Sargasso Sea encompasses a wide but not sharply delimited area (biologically speaking) of the North Atlantic Ocean situated roughly between 20 and 40 degrees north latitude and 35 and 75 degrees west longitude (Marmer 1928) and owes its name to the presence of two species of brown algae: *Sargassum fluitans* Boergesen and *S. natans* (L.) J. Meyen. On a recent cruise (during May 1970), the author observed numerous plants of *Ascophyllum nodosum* (L.) LeJolis and *Fucus vesiculosus* L. adrift with *Sargassum* along the northwestern fringes of the Sargasso Sea. The area visited includes the region from 69°24' west longitude to 69°48' west longitude and 38°53' north latitude to 39°11' north latitude (ca. 375 square miles) and lies roughly 125 miles south of Nantucket Island, 150 miles south of Cape Cod, Massachusetts, 170 miles east-southeast of Montauk Point, Long Island, and 75 miles north of the Gulf Stream.

The occurrence of macroscopic algae within the region appeared to be sporadic; densities as high as one plant per square meter were encountered in some places while at others virtually no weed was observed. Entangled masses of *Aescophyllum* and *Fucus* similar to those reported for *Sargassum* (Winge 1923) were not observed.

Samples taken at several stations with the aid of a long-handled dip net revealed both epiphytized and unepiphytized plants of *Ascophyllum* and *Fucus*. In all, 14 species of algae were collected (Table 1) including 2 Chlorophyta, 10 Phaeophyta, and 2 Rhodophyta. None of the epiphytic species has been recorded from the Sargasso Sea previously although isolated plants of *Ascophyllum* and *Fucus* have been reported (Collins 1917, Collins and Hervey 1917, Winge 1923). Many individuals of *Ascophyllum* and *Fucus*

examined appeared fresh and may still have been growing at the time of collection, but others bore very distended receptacles and showed signs of vegetative decay. Most of the epiphytes appeared somewhat moribund and lighter in color than their mainland counterparts and probably were not actively growing. These observations suggest that at least the epiphytized plants encountered represent detached specimens which have drifted out from the east coast of the United States rather than true pelagic forms.

Both *Ascophyllum* and *Fucus*, however, are reported to propagate vegetatively in the drifting state in European waters (Levring 1940, Oltmanns 1889, Reinke 1892, Sauvageau in Collins and Hervey 1971, p. 78) and further study appears warranted to determine whether reproduction of any sort similarly occurs in the northern Sargasso Sea. The presence of apparently healthy, unepiphytized plants of *Ascophyllum* and *Fucus* in the region visited certainly suggests the possibility of vegetative propagation. In fact, Collins and Hervey (1917, p. 79) have concluded (without experimental data) that *Ascophyllum* grows actively and occasionally reproduces sexually in the Sargasso Sea. Until more direct evidence comes to hand, however, it seems best to regard *Ascophyllum*, *Fucus* and particularly their associated epiphytes as invaders rather than permanent components of the Sargasso Sea flora.

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TABLE 1. Algae Collected Along Northwestern Fringes of Sargasso Sea, May 1970.

SPECIES	REMARKS
Chlorophyta:	
<i>Monostroma pulchrum</i> Farlow	On <i>Fucus</i>
<i>Sporogomorpha arcta</i> (Dillwyn) Kuetzing	On <i>Fucus</i>
Phaeophyta:	
<i>Ascophyllum nodosum</i> (L.) LeJolis	Specimens up to 1.0 m long collected
<i>Chordaria flagelliformis</i> (Müller) C. Ag.	Immature; on <i>Fucus</i>
<i>Elachistea lubrica</i> Rupr.	On <i>Ascophyllum</i> and <i>Fucus</i>

<i>Fucus vesiculosus</i> L.	Specimens up to .5 m long collected
<i>Isthmoplea sphaerophora</i> (Harvey in Hooker) Kjellman	On <i>Polysiphonia lanosa</i> in turn on <i>Ascophyllum</i>
<i>Punctaria latifolia</i> Grev.	On <i>Fucus</i>
<i>Punctaria plantaginea</i> (Roth) Grev.	On <i>Fucus</i>
<i>Pylaiella littoralis</i> L. Kjellman	On <i>Fucus</i>
<i>Sargassum natans</i> L. J. Meyen	Pelagic
<i>Scytosiphon lomentaria</i> (Lyngbye) C. Ag.	On <i>Fucus</i>
Rhodophyta:	
<i>Erythrotrichia carnea</i> (Dillwyn.) J. Ag.	On <i>Fucus</i>
<i>Polysiphonia lanosa</i> L. Tandy	On <i>Ascophyllum</i>

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